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(54) **PRESENTATION OF WEB PAGE CONTENT BASED UPON COMPUTER VIDEO RESOLUTIONS**

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(52) **U.S. Cl.** **709/228**; 709/206; 709/246
(58) **Field of Search** 345/774, 765; 709/203, 202, 217, 296, 208, 212, 207, 206, 220, 221, 222, 227, 228, 229, 236; 707/10, 517; 713/201; 348/567

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(57) **ABSTRACT**

An architecture for customizing the amount of web page banner advertising content presented to a user. When a user accesses a server node **(102)** disposed on a network **(104)**, the user computer **(100)** provides video resolution information to the server node **(102)**. The server node **(102)** transmits a web page to the user node **(100)** which corresponds to the video resolution information of the user node **(100)**. The web page increases the amount of banner advertising presented to the user based upon the user video resolution information provided by the user node **(100)**. The amount of banner advertising is increased by either increasing banner object size or providing more banner advertisements.

18 Claims, 3 Drawing Sheets

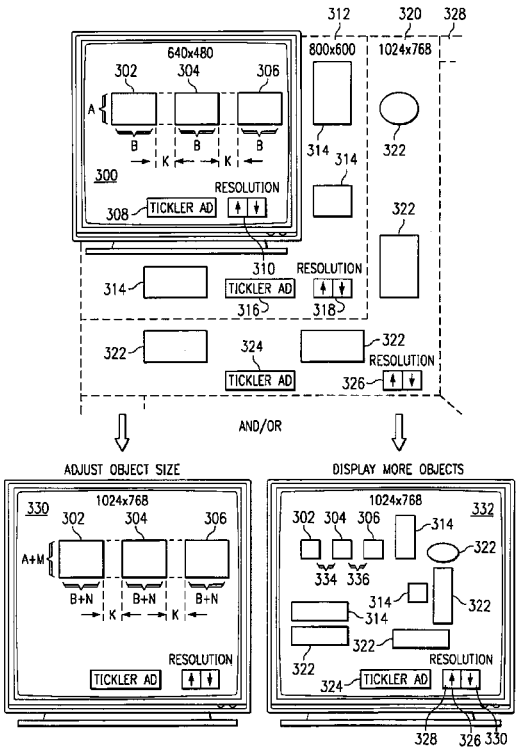
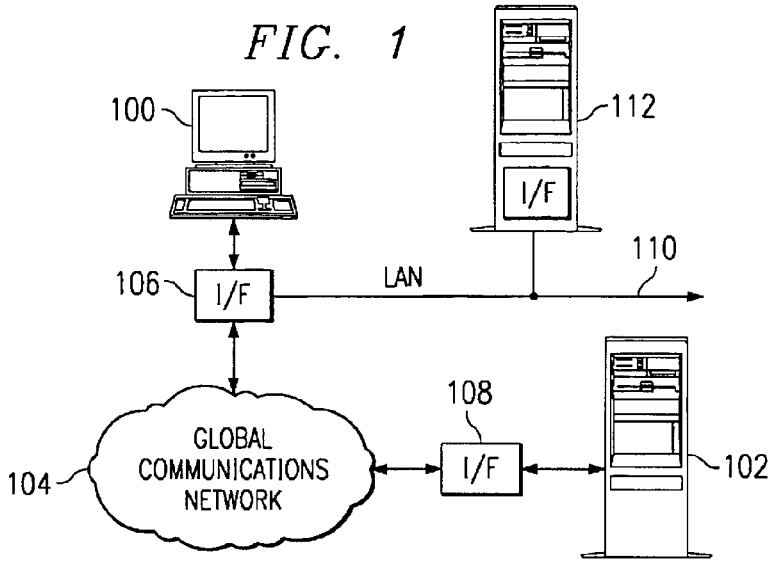


FIG. 1


100
112
I/F
110
106
I/F
LAN
108
GLOBAL
COMMUNICATIONS
NETWORK
104
I/F
102

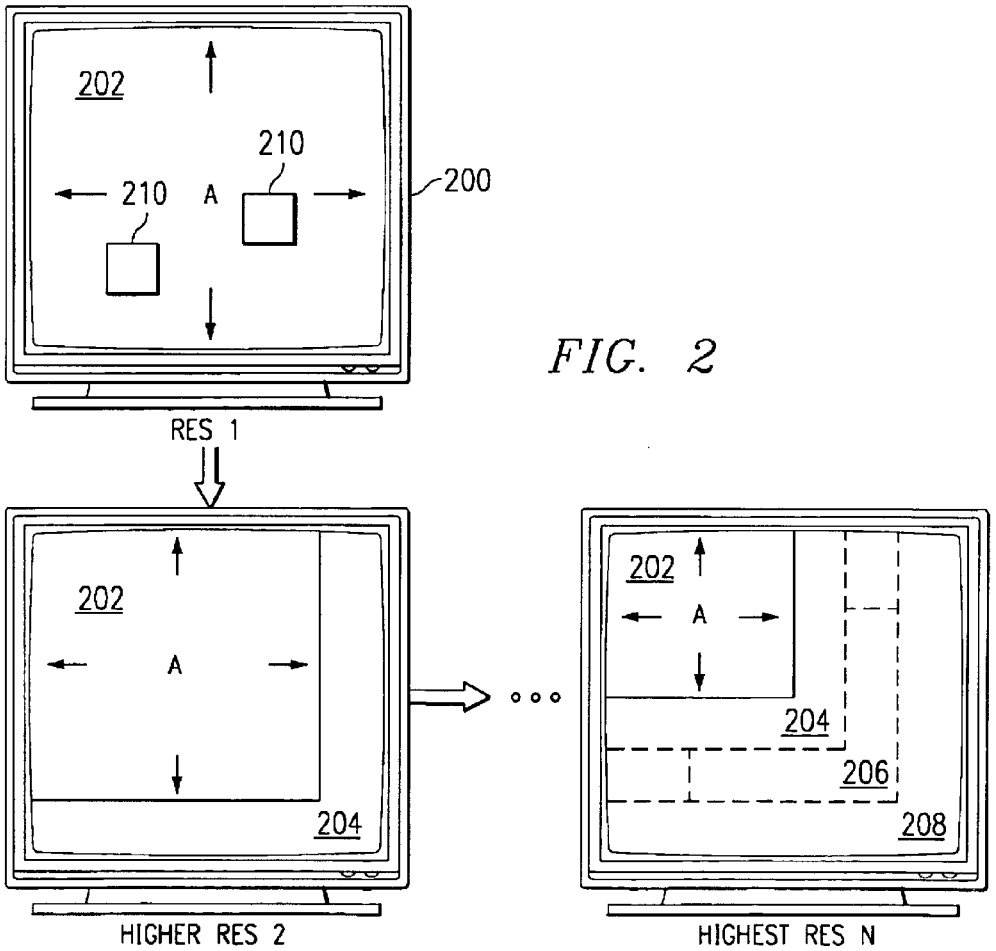

202
210
210
A
200
RES 1
202
A
204
HIGHER RES 2
202
A
204
206
208
HIGHEST RES N

FIG. 2

FIG. 3

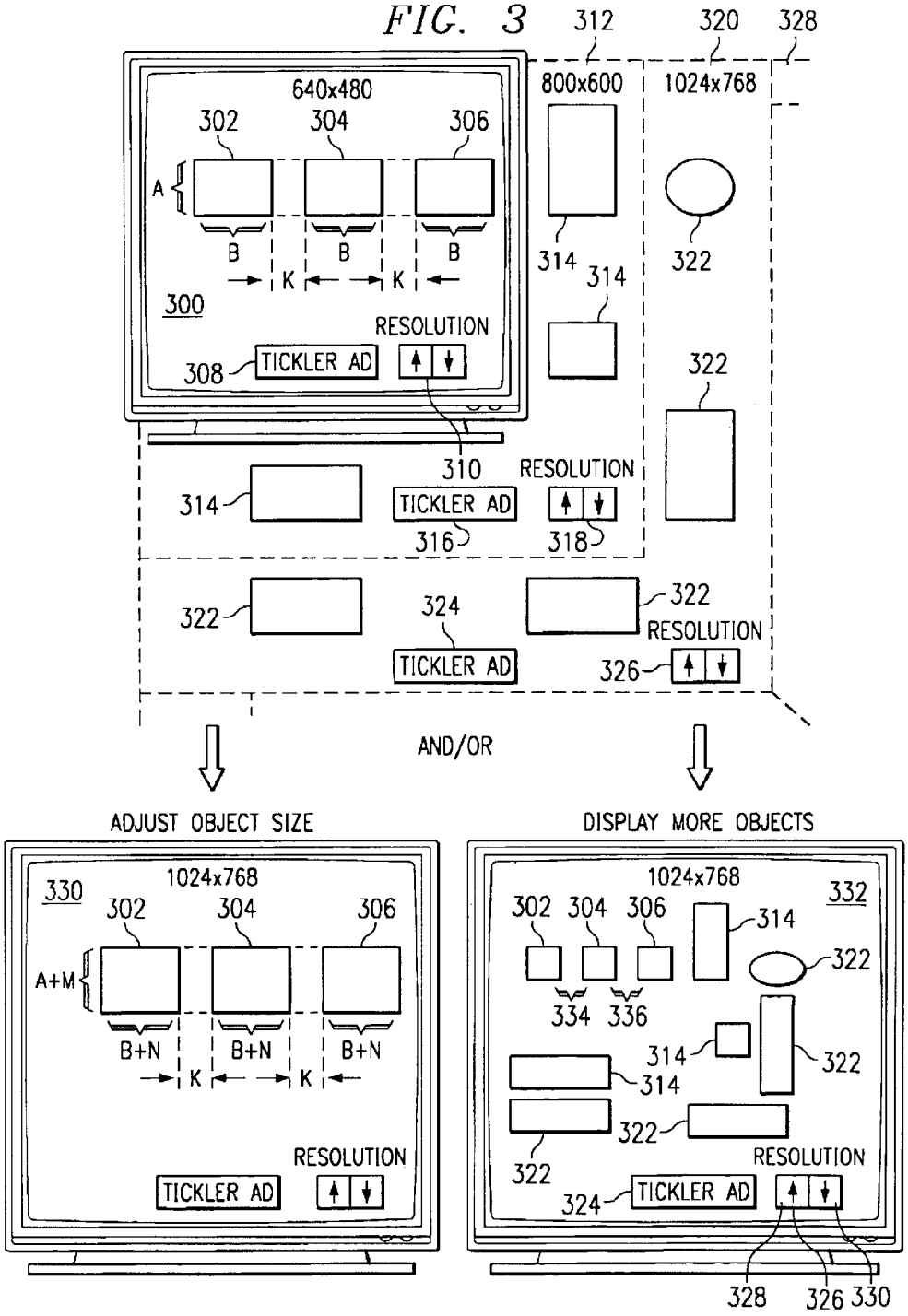

312
320
328
640x480
800x600
1024x768
302
304
306
A
B
K
300
RESOLUTION
308
TICKLER AD
310
314
316
318
322
324
326
AND/OR
ADJUST OBJECT SIZE
DISPLAY MORE OBJECTS
330
332
A+M
B+N
334
336

FIG. 4

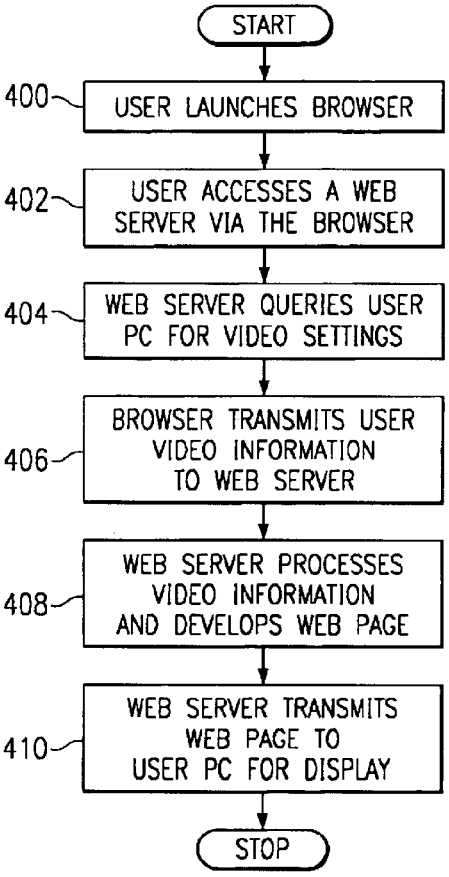
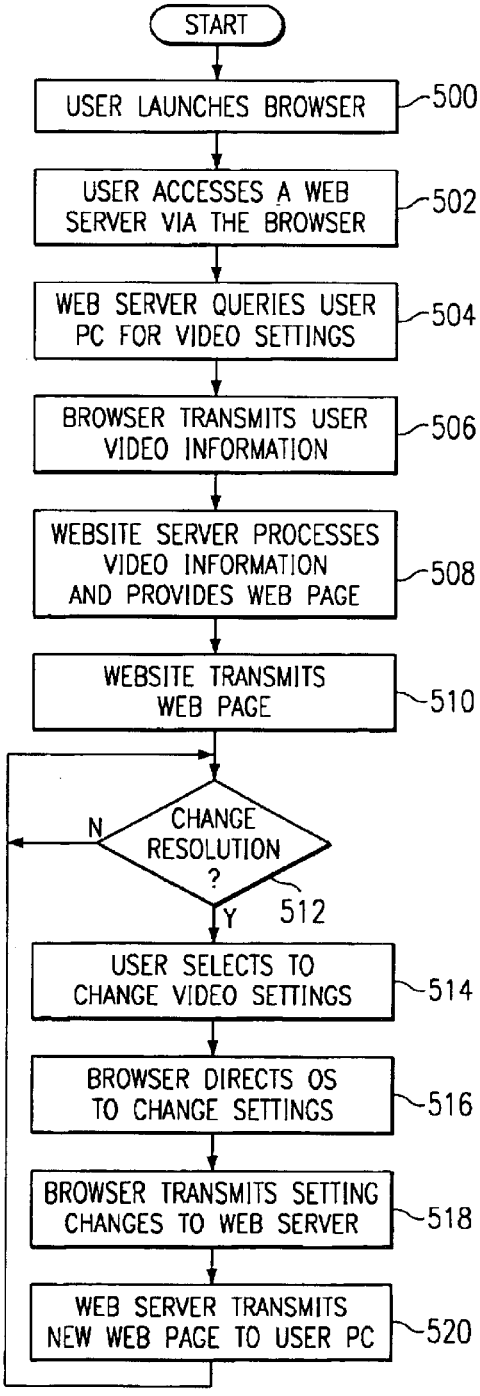

START
400
USER LAUNCHES BROWSER
402
USER ACCESSES A WEB SERVER VIA THE BROWSER
404
WEB SERVER QUERIES USER PC FOR VIDEO SETTINGS
406
BROWSER TRANSMITS USER VIDEO INFORMATION TO WEB SERVER
408
WEB SERVER PROCESSES VIDEO INFORMATION AND DEVELOPS WEB PAGE
410
WEB SERVER TRANSMITS WEB PAGE TO USER PC FOR DISPLAY
STOP

FIG. 5


START
USER LAUNCHES BROWSER
500
USER ACCESSES A WEB SERVER VIA THE BROWSER
502
WEB SERVER QUERIES USER PC FOR VIDEO SETTINGS
504
BROWSER TRANSMITS USER VIDEO INFORMATION
506
WEBSITE SERVER PROCESSES VIDEO INFORMATION AND PROVIDES WEB PAGE
508
WEBSITE TRANSMITS WEB PAGE
510
CHANGE RESOLUTION ?
N
Y
512
USER SELECTS TO CHANGE VIDEO SETTINGS
514
BROWSER DIRECTS OS TO CHANGE SETTINGS
516
BROWSER TRANSMITS SETTING CHANGES TO WEB SERVER
518
WEB SERVER TRANSMITS NEW WEB PAGE TO USER PC
520

PRESENTATION OF WEB PAGE CONTENT BASED UPON COMPUTER VIDEO RESOLUTIONS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is related to pending U.S. patent application Ser. No. 09/378,221 entitled "METHOD AND APPARATUS FOR ACCESSING A REMOTE LOCATION BY SCANNING AN OPTICAL CODE."

TECHNICAL FIELD OF THE INVENTION

This invention is related to computer display windowing and, more particularly, to the sensing of computer display resolution and displaying additional web page content based upon the computer display resolution.

BACKGROUND OF THE INVENTION

The competitiveness which exists in the computing market has had a positive effect for the purchasing consumer by driving prices down on most computer-related equipment and peripherals. When the substantial increase in computer sales is coupled with the equally large number of consumers becoming "connected" to global communication packet-switched networks (e.g., one of which is commonly known as the Internet), and the enormous potential for reaching those connected consumers with product advertising, a very competitive marketplace results to place as much web page advertising in front of the computer user as is possible.

One necessary component of a computing system, the monitor, is also experiencing rapid cost reductions and technological change. The early "standard" fourteen-inch display was a common fixture for most computing systems. Rapid advances in display technology have driven prices down, such that the average consumer no longer purchases a computer with a once-standard fourteen-inch monitor, but is more likely to buy a packaged system having a seventeen inch display. Furthermore, the larger nineteen and twenty-one inch units are also becoming more popular since the costs for such units are no longer prohibitive for the average consumer.

Along similar lines of technology, video technology has also evolved such that these larger monitors can, now handle greater resolutions allowing for the presentation of more information in a viewable area (hereinafter called a "viewport") to the user. However, to accommodate the majority of legacy systems projected to currently exist in the hands of consumers, and that are configured at predominantly the 640×480 resolution, many software developers write applications for a resolution of 640×480. With a higher number of larger monitors now in use, the 640×480 resolution is less adequate and users now reconfigure to higher resolutions (e.g., 800×600, 1024×768, etc.) which impacts the way the information is presented to the user.

With the advent of a global communication packet-switched network (GCN) and e-commerce, display resolution eventually translates into dollars in the context of banner advertising on web pages. One commercial aspect of the GCN provides that those website server owners who allow vendor advertising on their web pages receive compensation according to the number of "hits" a particular banner generates. The more hits, the greater the compensation for the website owner. Therefore, the more popular or widely known the advertising product, the greater the potential for a large number of hits having a corresponding increase in revenue for the website owner.

With web page "real estate" becoming a revenue-generating aspect, methods for optimizing use of such real estate become increasingly important. Considering the viewport aspects of monitor resolution and display size, web page real estate can be optimized to obtain the most dollars when presenting advertising banners to the consumer. However, when moving to higher resolutions, existing methods spread the banners out by inserting spacing material between the banners while maintaining the size of the banner. Thus, content objects which were a fixed distance apart under a low resolution of 640×480 are now further apart when viewed at a resolution of 1024×768. The content objects are visually centered by being spaced further apart to display information to the user in a more presentable manner by, for example, providing symmetry around a central horizontal and/or vertical axis.

The economic aspects of placing more advertising content in front of the viewer are directly impacted by the spacing of content objects, since website server owners are paid according to the amount of advertising real estate placed in front of the viewer. Inserting additional spacing material between content objects does not take advantage of the increase in viewing area provided to the viewer under higher resolutions. Therefore, it is desirable to employ a technique where an increase in display resolution provides a corresponding increase in banner income by increasing the amount of advertising real estate placed on the viewer's display without the insertion of spacing material. Such an application enhances optimization of banner advertising on -web pages by now being able to charge for web page real estate presented at the user level.

SUMMARY OF THE INVENTION

The invention disclosed and claimed herein comprises a method of presenting banner advertising of a web page to a user. A user node and a server node are provided both of which are disposed on a network. The server node obtains video resolution information of the user node in response to the user accessing the server node. The server node transmits to the user node a web page corresponding to the video resolution of the user node.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and the advantages thereof, reference is now made to the following description taken in conjunction with the accompanying Drawings in which:

FIG. **1** illustrates a system according to a disclosed embodiment;

FIG. **2** illustrates a conventional object region spacing technique;

FIG. **3** illustrates a diagram of various video resolutions and the associated banner object regions displayed for each;

FIG. **4** illustrates a flowchart of the process for a vendor server detecting and developing a web page according to the user video settings; and

FIG. **5** illustrates a flowchart of the process for implementing the tickler advertisement and resolution selection regions.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to FIG. **1**, there is illustrated a system according to a disclosed embodiment. A user at a personal computer (PC) **100** accesses a website server **102** disposed

on a global communication network (GCN) **104**. Both the user PC **100** and the website server **102** connect to the GCN **104** through respective network interface devices **106** and **108**. The user PC **100** is operable to run a browser application for accommodating compatible browser languages (e.g., HTML) provided on any of one or more of the website servers **102**. Upon accessing the website server **102**, the website server **102** obtains the video resolution setting of the user PC **100**. This may be accomplished in a number of ways, for example, by the browser application obtaining the video resolution information from the user PC **100** operating system (OS) and transmitting the resolution information during the website accessing process, or through a subsequent query process by the website server **102** of the user PC **100**.

The query process involves transmitting a resolution-request signal to the user PC **100** to ascertain the current video resolution setting of the user PC **100** display. The user PC **100** responds by sending the resolution information back to the website server **102**, this process performed without the knowledge of the user. In response, the website server **102** transmits the initial and subsequent web pages to the user PC **100** optimized for banner advertising according to the resolution of the user PC **100**. Conventional techniques transmit a web page having a fixed number of object regions associated with any resolution of the user PC **100**, and account for this short-coming by visually-centering the fixed number of objects regions using spacing material. The disclosed architecture obviates conventional resolution-accommodating techniques of adding spacing material by providing a web page that matches the user video resolution and increases the number of banner advertising object regions to provide the visually-centered effect. Alternatively, the disclosed architecture provides that the size and dimensions of the banner objects may be changed. This feature is useful if the website server **102** provides a web page which has only a limited number of advertising banners to display.

The disclosed architecture is applicable in any scenario where a client/server system exists (e.g., intranet, extranet, wide area network, etc.). As illustrated, the user PC **100** may be connected through its respective network interface **106** to a local area network (LAN) **110** having a LAN server **112** disposed thereon. The LAN server **112** provides information back to the user PC **100** in the form of web pages. The object regions may contain any information the server administrator deems important to the user.

Referring not to FIG. **2**, there is illustrated the content-controlling technique according to a disclosed embodiment. The disclosed technique presents additional banner advertising to the user as the video resolution of the user PC **100** increases. There is provided a display **200** having a viewable area **202**, which display **200** may be any size. As mentioned herein above, the 17" display (a monitor) is rapidly becoming the display of choice sold with many computer systems, although the information in any display is automatically scaled as a function of the size of the viewable area of the display to fill the viewable area in the same proportional amount (for some resolution).

At a first video resolution RES**1**, the viewable content A is configured to extend to fill the viewable area **202**, since it is defined at the source to occupy a fixed number of picture elements (hereinafter called "pixels"). When moving to a higher resolution RES**2**, the viewable content A is reduced in size (from the perspective of the user) leaving a residual area **204** free of content due to the fact that the display will now accommodate more pixels, with the content A occupying the same number of pixels, albeit with an overall reduced size. The viewable content therefore occupies the same number of pixels, but appears to be reduced, due to the increased video resolution, i.e., larger number of pixels. When determining that the user PC **100** has a video resolution of RES2, the website server **102** presents the user with a web page having the combined content of viewable content A occupying the same number of pixels plus the banner advertising content of the residual area **204**. This technique is used at all video resolutions, such that at a highest resolution RESN, the website server **102** presents a web page to the user that combines the viewable content A with all content in the residual areas, residual area **204**, one or more intermediate residual areas **206**, and a final residual area **208**.

Alternatively, and as was mentioned herein above, where the website server **102** has only a limited number of banner objects **210** to present to the user at user PC **100**, sensing a user PC **100** having a higher resolution RES**2** may not allow the presentation of more banner objects **210** to the user, when all of the banner objects **210** can be displayed at the lower resolution RES**1**. In this instance, the existing banner objects **210** can be automatically increased in size (occupying more pixels) to provide a corresponding increase in advertising revenue. Similarly, where the limited number of banner objects **210** available for display at the higher resolution results in an insufficient coverage of the web page real estate at the higher resolution, a combination of the resizing of selected banner objects **210** and display of the remaining banner objects which have not been resized is a solution to maximizing coverage of the available web page real estate.

Referring now to FIG. **3**, there is illustrated a diagram of various video resolutions and the associated banner objects displayed for each. A first viewport **300** having a resolution of 640×480 displays three banner objects (**302**, **304**, and **306**) of equal pixel dimensions A×B (the dimensions being equal for discussion purposes). The viewport **300** is that which a user would see on a user PC **100** having a video setting of 640×480 pixels. The viewport **300** also displays a tickler advertisement object **308** and a resolution selection object **310**. As mentioned herein above, the tickler advertisement in the tickler advertisement object **308** is an inducement to the user to increase their video resolution. In this way, the web server **102** owner can obtain more revenue by increasing the number of banner advertisements being viewed by the user.

A viewport **312** is an 800×600 pixel resolution viewport and includes all of the objects displayed in the viewport **300** (except the ticker advertisement object **308** and the resolution selection object **310**, as these are already provided in the pre-built viewport **312** web page) plus additional advertising objects **314**. The additional advertising objects can be added for viewing by the user due to the increased resolution of the viewport **312**. The objects will appear smaller to the user due to the increase in video resolution, wherein the objects did not increase in pixel size, but actually occupied a smaller display area at a higher resolution. The viewport **312** also contains a new tickler advertisement object **316** and a resolution selection object **318**, both of which will be placed in the same areas of the viewport for all resolutions such that the user can easily locate the objects.

A viewport **320** is a 1024×768 resolution viewport and includes all of the objects displayed in viewports **300** and **312**, plus additional advertising objects **322** (except the ticker advertisement objects **308** and **316**, and the resolution selection objects **310** and **318**, as tickler advertisement object **324** and a resolution selection object **326** are already

provided in the pre-built viewport **320** web page.) Note that a viewport **328** has an even greater pixel resolution than viewport **320**. The number of video resolutions is limited only by the capabilities of the user PC **100**. Therefore, web pages can be designed for all resolutions, or simply for the most popular resolutions, at the discretion of the website owner.

If a user having a 640×480 resolution setting (as indicated by viewport **300**) chooses to select a higher resolution setting of, for example, 1024×768, the disclosed architecture can either increase the size of the existing objects (as indicated by viewport **330**), add more banner objects (as indicated by viewport **332**), or both (not shown). The objects in viewport **330** have been increased in pixel size from an original dimension of A×B pixels in viewport **300** (a video resolution of 640×480) to a dimension of (A+M)(B+N) pixels, where M and N may or may not be equal. The spacing dimension K of the objects (**302**, **304**, and **306**) remains the same. This is to be compared to conventional techniques where spacing material is added with an increase in resolution, and removed with a decrease in resolution. In this way, visual centering can be maintained with a dimensional increase of the objects (in their pixel size), and also which has a corresponding increase in advertising revenue.

A viewport **332** is a complete viewport at a resolution of 1024×768 showing all object regions of the lower-resolution layouts (viewports **300** and **312** minus the associated tickler advertisements and resolution selection objects). The viewport **332** contains the objects **302**,**304**, **306**, **314**, and **322** which the user views at the user PC **100**. The tickler advertisement object **324** and resolution selection object **326** are also placed in the general location of the web page as in the other viewports **300** and **312**, and may be increased in size for easier viewing, at the discretion of the web page designer. As mentioned herein above, the interstitial spaces **334** and **336** remain the same as dimension K in viewport **300**, according to the disclosed architecture. However, optionally, the dimensions of objects **302**, **304**, and **306** may be increased to account for the reduction in object size when moving to a higher resolution setting. Note that object scaling and geometry alterations are performed with a geometry management algorithm which calculates the new dimensions for the object without increasing the horizontal spacing between the objects.

In more sophisticated implementations, the disclosed architecture provides that the web pages can be assembled on-the-fly according to the user PC **100** video settings by sorting algorithms which select the banner advertisement objects according to criteria, for example, size, revenue-generating potential, animation involved, etc. The size (in pixels) and shape of a particular banner advertisement object is a factor as to where it will be placed on the web page for a given resolution before sending the completed web page to the user PC **100** for viewing. A determination as to whether an animated banner is used can be based upon the connection bandwidth of the user PC **100**. Animated banners require greater download times, thus higher bandwidth connections can more easily accommodate the larger file sizes associated with a web page having animated banners.

The disclosed architecture also provides that a content object is operable to have associated therewith a drop-down feature such that where object expansion in an upward or downward direction is provided, the content object is increased in pixel size in the essentially downward direction to increase the web page real estate captured by advertising. Therefore, advertising revenue can be increased accordingly by invoicing the advertisers according to the respective increase in real estate covered by the advertisement of the particular content object as presented to the particular user.

Referring now to FIG. **4**, there is illustrated a flowchart of the process for a vendor server detecting and developing a web page according to the user video settings. Flow begins at a Start block and proceeds to a function block **400** where the user launches a browser program (i.e., a communication program) in preparation for accessing one or more website servers **102** disposed on the GCN **104**. The user accesses the web server **102** using the browser application, as indicated in function block **420**. The web server **102** then queries the user PC **100** for its current video settings, as indicated in function block **404**. The query may directly access the user PC **100** operating system to obtain this video information. The browser then transmits the video settings information to the website server **102**, as indicated in function block **406**. In a function block **408**, the website server **102** then processes the video settings information to determine what type of web page should be transmitted to the user PC **100** for display. As mentioned herein above, this process involves either resizing the existing object regions, adding more banner advertising regions, or both. Flow is then to a function block **410** where the website server **102** transmits the web page back to the user PC **100** for display. The process then ends at a Stop block. Note that, where a web server **102** is such that it cannot operate according to the disclosed architecture, the video settings automatically provided by the browser application are simply discarded. Also note that other methods for obtaining the user PC **100** video settings may be used. For example, the browser application may directly access the operating system for the video settings upon launch, and pass the video settings to web server **102** when the initial access is made. However, this scenario requires unnecessary network traffic, particularly if the web server **102** is not operable according to the disclosed architecture.

Referring now to FIG. **5**, there is illustrated a flowchart of the process for implementing the tickler advertisement and resolution selection regions. As mentioned herein above, the tickler advertisement object is an inducement to encourage the user to increase his or her video resolution in order to obtain a reward or offer. Increasing the video resolution also increases the number of banner advertisement objects which the user will view. Flow begins at a Start block and proceeds to a function block **500** where the user launches the browser program. The user accesses the web server **102** using the browser application, as indicated in function block **502**. The web server **102** then queries the user PC **100** for the video settings, as indicated in function block **504**. The browser then transmits the user video information to the web server **102**, as indicated in ftunction block **506**. In a function block **508**, the web server **102** processes the video setting information and develops a web page according to the received video settings of the user PC **100**. Note that the web pages need not be developed after the setting information is obtained, but can be predefined such that it becomes a matter of simply selecting the particular web page having the appropriate resolution which matches the user PC **100** video settings. Flow is to a function block S**10** where the web server **102** transmits the web page to the-user PC **100** for display.

After the user views the web page, flow is to a decision block **512** which monitors whether the user wants to increase the user PC **100** video resolution in response to the tickler advertisement. If not, flow is out the "N" path and loops back to the input of the decision block. If the user chooses to change the resolution, flow is out the "Y" path to

a function block **514** where the user selects either of the resolution changing icons (**328** or **330**) which make up the resolution selection object **326**. As illustrated in FIG. **3**, an up-arrow **328** causes a corresponding increase in video resolution while a down-arrow causes a corresponding reduction in video resolution. Flow is then to a function block **516** where the browser detects the user request to change the resolution setting. The browser then sends the resolution request to the OS to change the video settings of the user PC **100**. Flow is then to a function block **518** where the browser then notifies the web server **102** of the change in user video settings. The web server **102** then selects a new web page meeting the new user video settings and transmits the web page back to the user PC **100** for display, as indicated in a function block **520**. Flow then loops back to the input of decision block **512** to monitor whether the user chooses to make further video resolution changes.

Note that all viewport illustrations comprise typical web page features such as activity fields or indicators, window resizing icons, uniform resource locator (URL) address field, scroll bars, etc., commonly found on many web pages. The disclosed architecture takes into consideration these features when resizing objects and/or adding more banner objects of a web page.

It can be appreciated that with the convergence of broadcast media with the GCN **104**, the introduction of high definition television (HDTV) and large screen televisions used for the display of packet-switched content can take advantage of the disclosed architecture.

In summary, an architecture is disclosed where a web server obtains video resolution information of a user PC **100** when the user accesses the web server **102**. In response, the web server **102** returns a web page to the user PC **100** which is customized according to the video resolution of the user PC **100**. The disclosed architecture provides more banner advertising objects to a user PC **100** that has a higher video resolution. Alternatively, where the number of banner advertising objects are limited, the web server returns a web page to the user PC **100** having banner objects which have increased dimensions corresponding to a higher video resolution. The geometry management algorithm also provides for the instance of the customized web page having both banner objects of increased dimension and more objects for a higher video resolution. A group or pool of banner objects can be maintained such that the geometry algorithm automatically configures the layout of the web page for maximum coverage of available web page space according to a given video resolution. Advertisers are then charged according to the dimensions of the banner object and duration of time the advertisement was presented to the user.

Although the preferred embodiment has been described in detail, it should be understood that various changes, substitutions and alterations can be made therein without departing from the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. A method of presenting banner advertising of a web page to a user, comprising the steps of:

providing a server node that is disposed on a network that interfaces with a user node disposed on the network to allow communication between the server node and the user node such that web page content can be provided from a particular uniform resource locator (URL) that includes content that is uniquely associated with the URL and banner advertising that is variable and defined by the server of the content;

obtaining from the user node current video resolution settings of the user node by the server node over the network and without user intervention in response to the user accessing the server node and at the time of the user gaining access to the server node, which obtained video resolution settings represent the user node resolution settings at the time of access to the server node by the user; and

after determining the video resolution settings of the user node by the server node in direct response to receiving a request for access of information therefrom, transmitting to the user node from the server node a web page having maximized viewable banner advertising content which correspond to the determined video resolution settings of the user node at the time of transmission, wherein the size of the banner advertising can be varied as a function of the video resolution settings of the user node without varying the size of the content, such that the relative size of the content to the banner can be varied depending upon the resolution settings of the user node.

2. The method of claim **1**, wherein the step of obtaining obtains the video resolution settings from an operating system of a user computer of the user node.

3. The method of claim **1**, wherein during the step of obtaining, the server node queries the user node for the video resolution settings via a resolution request signal.

4. The method of claim **1**, wherein during the step of transmitting, the server node transmitting the web page having one or more banner objects which have been increased in size in relationship to a given video resolution and one or more of said banner objects which have not been increased in size to that given video resolution.

5. The method of claim **1**, wherein during the step of transmitting, the server node transmits the web page having one or more banner objects which have been increased in size in relationship to a given video resolution and without adding spacing material.

6. The method of claim **1**, wherein the server node has one or more predefined web pages for corroding to one or more predetermined video resolutions, and select ones of the one or more of the predefined web pages are transmitted to the user node during the step of transmitting according to the video resolution of the user node.

7. The method of claim **1**, wherein a geometry management algorithm automatically structures layout of the web page using one or more banner objects which are scaled in size and altered in geometry such that web page real estate coverage is maximized without adding spacing material.

8. The method of claim **1**, wherein the user node includes a display, the step of transmitting further comprising maximizing the viewable banner advertising content without changing pixel dimensions of other viewable objects on the display.

9. The method of claim **8**, wherein the viewable banner advertising content is maximized without changing pixel spacings between other viewable objects on the display.

10. An architecture for presenting banner advertising of a web page to a user, comprising:

a server node that is disposed on a network that interfaces with a user node disposed on said network to allow communication between the server node and the use node, said server node having such that web page content can be provided from a particular uniform resource locator (URL) that includes content that is uniquely associated with the URL and banner advertising that is variable and defined by the server of the content;

means for obtaining from the user node current video resolution settings of said user node over said network and without user intervention in response to the user accessing said server node over said network at the time of the user gaining access to the server node, which obtained video resolution settings represent the user node resolution settings at the time of access to the server node by the user; and

means for transmitting a web page having maximized viewable banner advertising content to said user node from said server node, after determining the video resolution settings of the user node by the server node in direct response to the server node receiving a request for access of information therefrom, which web page corresponds to the video resolution settings of said user node, the video resolution of the web page set in response to said means for obtaining said video resolution settings of said user node, wherein the size of the banner advertising can be varied as a function of the video resolution settings of the user node without varying the size of the content, such that the relative size of the content to the banner can be varied depending upon the resolution settings of the user node.

11. The architecture of claim **10**, wherein said means for obtaining obtains said video resolution settings from an operating system of a user computer of said user node.

12. The architecture of claim **10**, wherein said server node queries said user node for said video resolution settings via a resolution request signal.

13. The architecture of claim **10**, wherein said server node transmits the web page having one or more banner objects which have been increased in size in relationship to a given video resolution, and select ones of said one or more barmer objects which have not been increased in size to said given video solution.

14. The architecture of claim **10**, wherein said server node transmits the web page to said user node, the web page braving one or more banner objects which have been increased in size in relationship to a given video resolution without adding spacing material.

15. The architecture of claim **10**, wherein said server node has one or more predefined web pages for corresponding to one or more predetermined video resolutions, and select ones of said one or more of the predefined web pages are transmitted to said user node according to said video resolution of said user node.

16. The architecture of claim **10**, wherein a geometry management algorithm automatically structures layout of the web page using one or more banner objects which are scaled in size and altered in geometry such that web page real estate coverage is maximized without adding spacing material.

17. The architecture of claim **10**, wherein said user node includes a display and said viewable banner advertising content is maximized without changing pixel dimensions of other viewable object, on said display.

18. The architecture of claim **17**, wherein said viewable banner advertising content is miximized without changing pixel spacings between other viewable objects on said display.

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